

- a. estimating a relationship between placement of an item in a catalog and corresponding user responses, the user responses being obtained from a transaction history;
- b. determining an optimized position for each item using the estimated relationships; and
- c. forming a catalog with the items being placed at ~~the~~ determined optimized positions.

2. (Currently Amended) The method as recited in claim 1 further comprising the steps of:

- a. deploying a plurality of initial catalogs with different item placements; and
- b. obtaining user responses for the deployed catalogs, wherein the plurality of initial catalogs refer to any of different catalogs for different groups of users over ~~the~~ a same period of time, ~~or refer to~~ different catalogs for ~~the~~ a same group of users over different periods of time, ~~or both the cases~~ and a combination of both.

3. (Currently Amended) The method as recited in claim 1 wherein the step of estimating a relationship between placement of the items in a catalog and corresponding user responses comprises the steps of:

- a. computing item differentials from the user responses; and
- b. computing search costs from the user responses.

4. (Currently Amended) The method as recited in claim 3 wherein the step of computing item differentials comprises the steps of:

- a. computing ~~the~~ an effect of nature of item on user responses; and
- b. computing ~~the~~ an effect of nature of item on the user responses for other items in the catalog.

5. (Currently Amended) The method as recited in claim 3 wherein the step of computing search costs comprises the steps of:

- a. computing ~~the~~ an effect of placing an item at a particular position in the catalog on user responses; and
- b. computing ~~the~~ an effect of relative positions of items on user responses.

6. (Currently Amended) The method as recited in claim 1 wherein the step of determining an optimized position comprises the steps of:

- a. modeling a merchant specified objective as an optimization function in terms of item placement, item differentials, and search costs; and
- b. evaluating the optimization function to identify ~~the~~ an optimal placement of each item in the catalog.

7. (Currently Amended) A system for automatically designing a catalog for a plurality of items, the system comprising:

- a. ~~means~~ a mechanism operable for estimating a relationship between placement of an item in a catalog and corresponding user responses, the user responses being obtained from a transaction history;
- b. ~~means~~ a unit operable for determining an optimized position for each item using the estimated relationships; and
- c. ~~means~~ a device operable for forming a catalog with the items being placed at ~~the~~ determined optimized positions.

8. (Currently Amended) The system as recited in claim 7 further comprising:

- a. ~~means~~ a first sub-unit operable for deploying a plurality of initial catalogs with different item placements; and

b. means a second sub-unit operable for obtaining user responses for the deployed catalogs, the obtained responses forming the transaction history.

9. (Currently Amended) The system as recited in claim 7 wherein ~~the means for estimating relationship between placement of the items in a catalog and corresponding user responses~~ said mechanism comprises:

a. means a first sub-unit operable for computing item differentials from the user responses;
and

b. means a second sub-unit operable for computing search costs from the user responses.

10. (Currently Amended) The system as recited in claim 9 wherein the first sub-unit means ~~for computing item differentials~~ comprises:

a. means a first computer operable for computing ~~the~~ an effect of nature of item on user responses; and

b. means a second computer operable for computing ~~the~~ an effect of nature of item on the user responses for other items in the catalog.

11. (Currently Amended) The system as recited in claim 9 wherein the second sub-unit ~~means for computing search costs~~ comprises:

a. means a first computer operable for computing ~~the~~ an effect of placing an item at a particular position in the catalog on user responses; and

b. means a second computer operable for computing ~~the~~ an effect of relative positions of items on user responses.

12. (Currently Amended) The system as recited in claim 7 wherein the unit ~~means for determining an optimized position~~ comprises:

- a. ~~means a first sub-unit operable~~ for modeling a merchant specified objective as an optimization function in terms of item placement, item differentials, and search costs; and
- b. ~~means a second sub-unit operable~~ for evaluating the optimization function to identify the an optimal placement of each item in the catalog.

13. (Currently Amended) ~~A computer program product~~ A program storage device readable by computer, tangibly embodying a program of instructions executable by said comoputer to perform a method for automatically designing a catalog for a plurality of items, the computer program product the method comprising:

- a. ~~program instruction means for estimating relationship between placement of an item in a catalog and corresponding user responses, the user response being obtained from transaction history;~~
- b. ~~program instruction means for determining an optimized position for each item using the estimated relationships; and~~
- c. ~~program instruction means for forming a catalog with the items being placed at the determined positions~~

estimating a relationship between placement of an item in a catalog and corresponding user responses, the user responses being obtained from a transaction history;

determining an optimized position for each item using the estimated relationships; and

forming a catalog with the items being placed at determined optimized positions.

14. (Currently Amended) The ~~computer program storage device product~~ as recited in claim 13 further comprising:

- a. ~~program instruction means for deploying a plurality of initial catalogs with different item placements; and~~

b. ~~program instruction means for obtaining user response for the deployed catalogs, the obtained response forming the transaction history~~

deploying a plurality of initial catalogs with different item placements; and

obtaining user responses for the deployed catalogs, wherein the plurality of initial catalogs refer to any of different catalogs for different groups of users over a same period of time, different catalogs for a same group of users over different periods of time, and a combination of both.

15. (Currently Amended) The ~~computer program product~~ program storage device as recited in claim 13 wherein the program instruction means for estimating relationship between placement of the items in a catalog and corresponding user responses comprises:

a. ~~program instruction means for computing item differentials from the user responses;~~
and

b. ~~program instruction means for computing search costs from the user responses~~

computing item differentials from the user responses; and

computing search costs from the user responses.

16. (Currently Amended) The ~~computer program product~~ program storage device as recited in claim 15 wherein the program instruction means for computing item differentials comprises:

a. ~~program instruction means for estimating the effect of nature of item on user responses;~~
and

b. ~~program instruction means for estimating the effect of nature of item on the user responses for other items in the catalog~~

computing the an effect of nature of item on user responses; and

computing the an effect of nature of item on the user responses for other items in the catalog.

17. (Currently Amended) The ~~computer program product~~ program storage device as recited in claim 15 wherein the program instruction means for computing search costs comprises:

a. ~~program instruction means for estimating the effect of placing an item at a particular position in the catalog on user responses; and~~

b. ~~program instruction means for estimating the effect of relative positions of items on user responses~~

computing an effect of placing an item at a particular position in the catalog on user responses; and

computing an effect of relative positions of items on user responses.

18. (Currently Amended) The ~~computer program product~~ program storage device as recited in claim 13 wherein the program instruction means for determining an optimized position comprises:

a. ~~program instruction means for modeling the specified objective as an optimization function in terms of item placement, item differentials and search costs; and~~

b. ~~program instruction means for evaluating the optimization function to identify the optimal placement of each item in the catalog~~

modeling a merchant specified objective as an optimization function in terms of item placement, item differentials, and search costs; and

evaluating the optimization function to identify an optimal placement of each item in the catalog.

19. (Currently Amended) A method for placement of a plurality of items in a catalog, the placement being directed to achieve a specified objective, the method comprising the steps of:

- a. deploying a plurality of initial catalogs with different placements for the plurality of items;
- b. obtaining user responses for the plurality of initial catalogs, wherein the plurality of catalogs refer to any of different catalogs for different groups of users over the same period of time, ~~or refer to~~ different catalogs for the same group of users over different periods of time, ~~or both the cases and a combination of both;~~
- e. computing catalog parameters from the user responses; and
- d. optimizing placement of items in the catalog using the catalog parameters.

20. (Currently Amended) The method as recited in claim 19 wherein the step of computing catalog parameters comprises the steps of:

- a. computing item differentials from the user responses; and
- b. computing search costs from the user responses.

21. (Currently Amended) The method as recited in claim 20 wherein the step of computing item differentials comprises the steps of:

- a. computing ~~the~~ an effect of nature of item on user responses; and
- b. computing ~~the~~ an effect of nature of item on the user responses for other items in the catalog.

22. (Currently Amended) The method as recited in claim 20 wherein the step of computing search costs comprises the steps of:

- a. computing ~~the~~ an effect of placing an item at a particular position in the catalog on user responses; and
- b. computing ~~the~~ an effect of relative positions of items on user responses.

23. (Currently Amended) The method as recited in claim 19 wherein the step of optimizing placement of items comprises the steps of:

- a. modeling a merchant specified objective as an optimization function in terms of item placement, item differentials, and search costs; and
- b. evaluating the optimization function to identify ~~the~~ an optimal placement of items in the catalog.

24. (Currently Amended) A method for dynamically optimizing an online catalog, the catalog being designed based on user response data of previously deployed catalogs, the method comprising the steps of:

- a. computing catalog parameters from user response data;
- b. modeling a merchant specified objective as an optimization function in terms of placement of item in a catalog and catalog parameters;
- c. evaluating the optimization function to identify ~~the~~ an optimal placement of items in the catalog;
- d. forming a catalog with the items being placed at ~~the~~ positions obtained from evaluating the optimization function;
- e. deploying ~~the~~ a formed catalog; and

f. updating user response data based on response to the formed ~~deployed~~ catalog,

wherein steps a to f are repeated to dynamically update the ~~optimized~~ catalog based on recent user responses.

25. (Currently Amended) The method as recited in claim 24 further comprising the steps of:

a. deploying a plurality of initial catalogs with different placement for ~~the~~ a plurality of items; and

b. obtaining user response data for the deployed catalogs, wherein the plurality of catalogs refer to any of different catalogs for different groups of users over the same period of time, ~~or~~ refer to different catalogs for the same group of users over different periods of time, a combination of both ~~or both the cases~~.